



October 12, 1999

Michael Martin
California Energy Commission
Attention: Docket No. 98-A&B-1
Docket Unit
1516 Ninth Street, MS-4
Sacramento, CA 95814

RE: APPLIANCE STANDARDS RULEMAKING

Dear Michael,

I have looked at the Second Preliminary Draft Appliance Standards on behalf of CABEC, and have the following concerns:

1) **CERTIFICATION DATA:** The preliminary Data Reporting Forms do not list Supply Fan Horsepower (HP) as a Title 24 ACM required modeling input, nor as a proposed CEC appliance certification data requirement. The certified Nonresidential ACM compliance software also asks whether motors (including fan motors) are "standard" or "premium" efficiency. This is therefore another required Title 24 input for Performance compliance. The 1998 Nonresidential ACM Manual says the following:

2.4.2.22 Design Fan Power Demand

For each supply fan and each return fan system (except for the fan-coil system serving the residential unit of a high-rise residential building or a hotel/motel guest room), ACMs must require the user to input: 1) the design BHP; 2) the design drive motor efficiency; and, 3) the design motor efficiency, all at peak design air flow rates.

CABEC is not proposing that Brake Horsepower (BHP) be a submittal requirement, because BHP obviously varies by design conditions. We would like manufacturers to include the nominal HP, which is a fixed number. The nominal HP is an allowed ACM modeling input where the BHP is not known. Knowledge of a system's nominal HP also is useful in determining whether a modeled BHP is reasonable.

2) **UNIQUE MODEL NUMBERS FOR AC EQUIPMENT WITH OPTIONS THAT AFFECT ENERGY CONSUMPTION:** Manufacturers of package AC equipment, especially equipment with a nominal capacity of 6 ton and more, typically offer the equipment with optional larger fan motors. The basic model number is exactly the same regardless of the fan size. Only an "option" letter or letters, typically located at

the right end of the model number sequence, identifies the fan motor type. To the best of my knowledge (based on a review of CEC certified AC equipment lists), when manufacturers currently submit data to the CEC for certification, they give the base model numbers and efficiency data. They do not include the option letters that would indicate use of a larger fan motor, and they do not account for variances in system efficiency. I spoke to Martyn Dodd, publisher of the EnergyPro Title 24 performance compliance software, on Oct. 11 about AC system efficiency and fan size. He pointed out that the Nonresidential ACM subtracts out a fixed rate of fan power (based on the equipment's capacity), then adds in the actual modeled fan BHP and efficiency. Therefore, he did not feel that it is important, regarding ACM/performance compliance, for the AC system manufacturers to be required to develop efficiency ratings for equipment using optional larger fan motors. However, as use of larger fan motors affects the equipment efficiency, it is probable that some equipment that currently meets minimum efficiency requirements, if tested with the optional fan motors, would not meet minimum efficiency requirements. Therefore, AC system manufacturers should be required to submit data, in conjunction with a unique model number, for each system that has any differing physical or functional characteristics that affect energy consumption.

3) MARKING OF APPLIANCE: If AC system manufacturers can continue to offer optional larger supply fans, with only a change in the "option" portion of the model number, then the fan nominal horsepower should be required to be on the equipment nameplate. Also, the fan motor efficiency ("standard" or "premium") should be on the nameplate. Without the fan information on the nameplate, there is virtually no chance that a field check (by the code enforcement agency and/or by the building owners) will determine whether the AC equipment is consistent with the Title 24 requirement (when compliance is under the Performance method).

Thank you for your continued attention to our concerns. I regret that I will not be able to attend the next workshop later this week, but please feel free to contact me (at the address below) should you have questions regarding these issues.

Cordially,

A black and white image of a handwritten signature in cursive script, which appears to read "Gary Farber". The signature is written in dark ink on a light background.

Gary Farber
CABEC Nonresidential Standards Chair

NOTE: please contact Gary Farber at:

Farber Energy Design
1990 N. California Blvd., Suite 830
Walnut Creek, CA 94596
Tel (925) 926-0425 Fax (925) 926-0435 gfarber@jps.net